

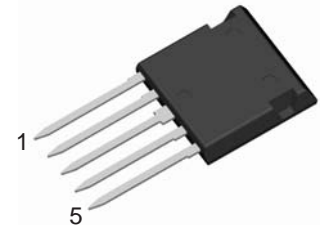
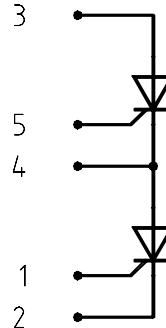
Phase Control Thyristors

-Phaseleg Topology-
in ISOPLUS i4-PAC™

$$\begin{aligned} V_{\text{DRM}} = V_{\text{RRM}} &= 1200 \text{ V} \\ I_{\text{T(AV)}} &= 21 \text{ A} \\ I_{\text{TSM}} &= 300 \text{ A} \end{aligned}$$

Preliminary Data

V_{RSM}	V_{RRM}	Type
V_{DSM}	V_{DRM}	
V	V	
1300	1200	FCC 21-12io



Thyristors

Symbol	Conditions	Maximum Ratings	
$V_{\text{DRM}}, V_{\text{RRM}}$		1200	V
$I_{\text{T(AV)}}$	sine 180°; $T_{\text{C}} = 90^{\circ}\text{C}$	21	A
$I_{\text{T(AV)}}$	square; $d = 1/3$; $T_{\text{C}} = 90^{\circ}\text{C}$	20	A
I_{TSM}	sine 180°; $t = 10 \text{ ms}$; $V_{\text{R}} = 0 \text{ V}$; $T_{\text{VJ}} = 25^{\circ}\text{C}$	300	A
$(di/dt)_{\text{cr}}$	$T_{\text{VJ}} = T_{\text{VJM}}$ repetitive, $I_{\text{T}} = 40 \text{ A}$ $f = 50 \text{ Hz}$, $t_{\text{p}} = 200 \mu\text{s}$ $V_{\text{D}} = 2/3 V_{\text{DRM}}$ $I_{\text{G}} = 0.3 \text{ A}$ non repetitive, $I_{\text{T}} = 30 \text{ A}$ $di_{\text{G}}/dt = 0.3 \text{ A}/\mu\text{s}$	150	A/ μs
$(dv/dt)_{\text{cr}}$	$T_{\text{VJ}} = T_{\text{VJM}}$; $V_{\text{DR}} = 2/3 V_{\text{DRM}}$ $R_{\text{GK}} = \infty$; method 1 (linear voltage rise)	1000	V/ μs

Symbol	Conditions	Characteristic Values ($T_{\text{VJ}} = 25^{\circ}\text{C}$, unless otherwise specified)		
		min.	typ.	max.
V_{T}	$I_{\text{T}} = 30 \text{ A}$; $T_{\text{VJ}} = 25^{\circ}\text{C}$ $T_{\text{VJ}} = 125^{\circ}\text{C}$		1.3	1.3 V
V_{GT}	$V_{\text{D}} = 6 \text{ V}$			1.4 V
I_{GT}				55 mA
V_{GD}	$T_{\text{VJ}} = T_{\text{VJM}}$; $V_{\text{D}} = 2/3 V_{\text{DRM}}$			0.2 V
I_{GD}				5 mA
I_{L}	$t_{\text{p}} = 10 \mu\text{s}$; $V_{\text{D}} = 6 \text{ V}$ $I_{\text{G}} = 0.3 \text{ A}$; $di_{\text{G}}/dt = 0.3 \text{ A}/\mu\text{s}$			150 mA
I_{H}	$V_{\text{D}} = 6 \text{ V}$; $R_{\text{GK}} = \infty$			100 mA
t_{gd}	$V_{\text{D}} = 1/2 V_{\text{DRM}}$; $V_{\text{D}} = 6 \text{ V}$ $I_{\text{G}} = 0.3 \text{ A}$; $di_{\text{G}}/dt = 0.3 \text{ A}/\mu\text{s}$			2 μs
$I_{\text{R}}, I_{\text{D}}$	$V_{\text{R}} = V_{\text{RRM}}$; $V_{\text{D}} = V_{\text{DRM}}$; $T_{\text{VJ}} = 25^{\circ}\text{C}$ $T_{\text{VJ}} = 125^{\circ}\text{C}$		0.5	50 μA mA
R_{thJC}	DC current			1.0 K/W
R_{thJH}		1.32		K/W

Features

- Thyristor
 - for line frequency
 - chip technology for long term stability
- ISOPLUS i4-PAC™ package
 - isolated back surface
 - UL registered E 72873
 - low coupling capacity between pins and heatsink
 - enlarged creepage towards heatsink
 - application friendly pinout
 - high reliability
 - industry standard outline

Applications

- controlled rectifiers
 - power supplies
 - drives
- AC switches

IXYS reserves the right to change limits, test conditions and dimensions.

Component

Symbol	Conditions	Maximum Ratings	
T_{VJ}		-40...+125	°C
T_{stg}		-55...+125	°C
V_{ISOL}	$I_{ISOL} \leq 1 \text{ mA}; 50/60 \text{ Hz}$	2500	V~
F_c	mounting force with clip	20...120	N

Symbol	Conditions	Characteristic Values		
		min.	typ.	max.
C_p	coupling capacity between shorted pins and mounting tab in the case		40	pF
d_s, d_A	pin - pin	1.7		mm
d_s, d_A	pin - backside metal	5.5		mm
Weight			9	g

Dimensions in mm (1 mm = 0.0394")

